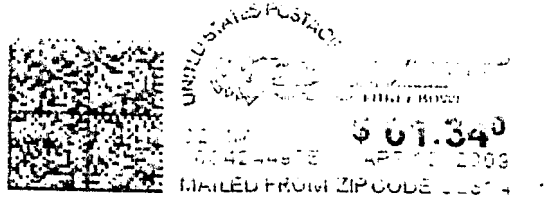
Organization TC2800 Bldg/Room JCII

United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
If Undeliverable Return in Ten Days

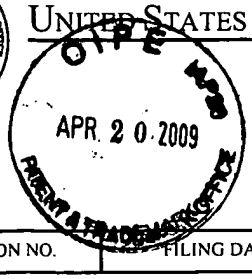
OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300



AN EQUAL OPPORTUNITY EMPLOYER

Moved

UNITED STATES PATENT AND TRADEMARK OFFICE



UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,760	07/28/2006	Richard J. Bailey		9926

7590 04/10/2009

Michael R McKenna
Suite 3800
500 W Madison Street
Chicago, IL 60661-2511

EXAMINER	
CARTON, MICHAEL	
ART UNIT	PAPER NUMBER
4118	

MAIL DATE	DELIVERY MODE
04/10/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/587,760	BAILEY, RICHARD J.	
	Examiner	Art Unit	
	MICHAEL CARTON	4118	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-44 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-24 and 26-44 is/are rejected.

7)☒ Claim(s) 25 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 28 July 2006 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 7/28/2006.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3, 13-15, 17, 26-28, 38, 41, 43-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faqih (US Patent No. 6574979) in view of Domen (US Patent No. 6440275).

With respect to claims 1-3, 13-15, 17, 26-28, 38, 41, 43-44 Faqih discloses a water production system for efficiently making potable water in an environment of humid air comprising:

a. at least one heat exchanger in which a cooling fluid is drawn through by a pump, said at least one heat exchanger being disposed in a path of the humid air so that the humid air flows externally on the at least one heat exchanger to condense water vapor from the humid air and produce potable water (702 fig 1 shows coils depicted as heat exchangers with cooling fluid flowing through the coils to enhance the condensation on the coil and is described in column 13 lines 1-5. furthermore, each segment of the coils is regarded as a separate heat exchanger, placing all the segments in a parallel relationship to one another);

b. means for controlling the volume of the cooling fluid passing through the at least one heat exchanger in response to an amount of heat absorbed by the at least one heat exchanger in the process of condensing water vapor from the humid air; and means for enhancing the rate of at which water vapor is condensed from the humid air (the system is disclosed as including fans to

increase the condensation rate in column 13 lines 8-13 and the fans also serve to regulate the pressure of the humid air in the system, and also pumps 802 and valves 803 both in fig 7 to control when and how the cooling fluid flows in relation to the fluids temperature in the inlet and outlet described in column 15 lines 37-45) .

Faqih also discloses many different ways to treat the water to make it more suitable for drinking including filtration in column 14 lines 2-5 and also in column 16 lines 52-55.

Furthermore, Faqih discloses the inlet reservoir may be open to the environment including the ocean for the supply of cooling fluid (column 21 lines 34-35).

Faqih does not specifically disclose the cooling fluid is drawn through the system by negative siphon pressure. Such a process however is not novel, and is well known in the art. Additionally, Domen discloses using negative siphon pressure or in the alternate pumps for circulating fluids through a still used to produce fresh water. Domen further discloses the inlet pipe 54 (fig 1) has an inlet above the outlet of outlet pipe 56 (fig 1) which is essential for the siphon action to work. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Faqih by using negative siphon pressure to circulate the cooling fluid instead of a pump as taught by Domen for the purpose of saving energy consumption, reducing operating costs.

3. Claims 6-11, 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faqih (US Patent No. 6574979) in view of Domen (US Patent No. 6440275) in further view of McLorg (US Patent No. 5675938).

With respect to claims 6-11, 31-33, Faqih discloses a partially open structure above the heat exchanger including fans and a dome system having sheeting covering the system being

supported by air pressure and a means for anchoring the sheeting, furthermore the dome system does not contact the heat exchanger (figures 5 and 6 both depict a dome structure partially open with fans. The walls of the dome are akin to sheeting). Faqih does not specifically disclose the dome system includes flexible sheeting and the dome is flexible. McLorg discloses a flexible dome supported with anchoring as well as positive air pressure (disclosed in abstract as well as fig 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the structure of Faqih with the flexible sheeting supported by positive air pressure as well as anchors as taught by McLorg for the purpose of irrigation of the soil as well as preventing soil salivation as taught by McLorg.

Claims 4-8, 9-10, 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faqih (US Patent No. 6574979) in view of Domen (US Patent No. 6440275) in further view of Kensok (US Patent No. 6220039).

With respect to claims 4-5, 9-10, 39 Faqih discloses all claimed elements except for a means for increasing the specific humidity including a ducted fan humidifier. Kensok however discloses a ducted humidifier that increases humidity in an apparatus used to control the humidity and dew point (discloses in figure 2 as well as the abstract). It would have been obvious to one of ordinary skill in the art to modify Faqih with a means to increase the humidity including using a ducted humidifier as taught by Kensok for the purpose of controlling the dew point so as to increase potable water production by eliminating the need to shut off the system as disclosed by Faqih in column 15 lines 46-54.

Claims 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faqih (US Patent No. 6574979) in view of Domen (US Patent No. 6440275) in view of McLorg (US Patent No. 5675938) in further view of Kensok (US Patent No. 6220039).

With respect to 34-37, Faqih discloses all claimed elements except for a means for increasing the specific humidity including a ducted fan humidifier. Kensok however discloses a ducted humidifier that increases humidity in an apparatus used to control the humidity and dew point (discloses in figure 2 as well as the abstract). It would have been obvious to one of ordinary skill in the art to modify Faqih with a means to increase the humidity including using a ducted humidifier as taught by Kensok for the purpose of controlling the dew point so as to increase potable water production by eliminating the need to shut off the system as disclosed by Faqih in column 15 lines 46-54.

Furthermore, Faqih discloses a partially open structure above the heat exchanger including fans and a dome system having sheeting covering the system being supported by air pressure and a means for anchoring the sheeting, furthermore the dome system does not contact the heat exchanger (figures 5 and 6 both depict a dome structure partially open with fans. The walls of the dome are akin to sheeting). Faqih does not specifically disclose the dome system includes flexible sheeting and the dome is flexible. McLorg discloses a flexible dome supported with anchoring as well as positive air pressure (disclosed in abstract as well as fig 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the structure of Faqih with the flexible sheeting supported by positive air pressure as well as anchors as taught by McLorg for the purpose of irrigation of the soil as well as preventing soil salivation as taught by McLorg.

4. Claims 12, 16, 40, 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faqih (US Patent No. 6574979) in view of Domen (US Patent No. 6440275) in further view of Heimerl (US Patent No. 3748070).

With respect to claim 12, 16, 40, 42, Faqih discloses all claimed elements except for a vibrating means used to break surface tension and release condensate water from the heat exchanger. Such a process is however is not novel as Heimerl discloses as oscillating member 70 (fig 1) that causes vibrations to break surface tension promoting dripping of a fluid (column 3 lines 1-5). It would have been obvious to one of ordinary skill in the art at the time of the invention to use an oscillation member to promote dripping by reducing surface tension as taught by Heimerl for the purpose of speeding the process of water falling from the heat exchanger and causing small droplets of water to fall from the heat exchanger by reducing surface tension.

5. Claims 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faqih (US Patent No. 6574979) in view of Domen (US Patent No. 6440275) in further view of Harrison (US Patent No. 5553459).

With respect to claims 18-23, Faqih discloses all claimed elements except for a float valve to maintain the volume of cooling water. Floats are common however, and are disclosed by Harrison in a water recovery device used to maintain water level in a tank (column 4 lines 20-26). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Faqih with a float valve used to maintain the level of cooling fluid at a predetermined level as taught by Harrison for the purpose of controlling the flow of cooling fluid and maintaining it at a certain level as taught by Harrison in claim 13.

6. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Faqih (US Patent No. 6574979) in view of Domen (US Patent No. 6440275) in view of Harrison (US Patent No. 5553459) in further view of Ishikawa (Japanese Patent No. 01015197).

With respect to claim 24 Faqih discloses all claimed elements except for a moveable weir that moves in response to temperature of the cooling fluid in the outlet. Moving a weir in response to temperature of a fluid is however disclosed by Ishikawa in the abstract. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Faqih so the control means of the cooling fluid would include a moveable weir that moves in response to the fluid in the reservoir as taught by Ishikawa for the purpose of regulating the cooling fluid's level in the storage tank by keeping hot, used fluid separate from cool, unused fluid in the same tank with a moveable weir that moves in response to temperature.

7. Claims 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faqih (US Patent No. 6574979) in view of Domen (US Patent No. 6440275) in further view of McQueen (US Patent No. 4253795).

8. With respect to claims 29, 30, Faqih discloses all claimed elements except for a water wheel in the path of the cooling water that discharges from one of the heat exchanger that transports the potable water to a storage tank. Water wheels however are not novel, as disclosed by McQueen. McQueen uses a water wheel in the path of a fluid to move a shaft which powers a generator. This system is capable of harvesting power from the used cooling fluid to power a pump to pump the potable water disclosed by applicant. It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Faqih by using a water wheel powered by the used cooling fluid to produce energy as taught by McQueen and use the energy

to transport potable water for the purpose of saving energy by converting the kinetic energy of falling fluid to mechanical energy as taught by McQueen.

Allowable Subject Matter

9. Claim 25 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Schooley (US Publication No. 20020017108), Longmore (US Patent No. 5245984).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL CARTON whose telephone number is (571)270-7837. The examiner can normally be reached on Monday-Friday 7:30am - 5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler or Frantz Jules can be reached on (571)272-4834 or (571)272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. C./
Examiner, Art Unit 4118

/Henry Yuen/
Supervisory Patent Examiner,
TC 3700

Notice of References Cited	Application/Control No. 10/587,760	Applicant(s)/Patent Under Reexamination BAILEY, RICHARD J.	
	Examiner MICHAEL CARTON	Art Unit 4118	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-3,748,070 A	07-1973	Heimerl, Joseph	425/6
*	B	US-4,253,795 A	03-1981	McQueen, Sylvester	415/125
*	C	US-5,245,984 A	09-1993	Longmore et al.	126/639
*	D	US-5,553,459 A	09-1996	Harrison, Larry G.	62/93
*	E	US-5,675,938 A	10-1997	McLorg, Anthony Barr	52/2.26
*	F	US-6,220,039 B1	04-2001	Kensok et al.	62/93
*	G	US-2002/0017108 A1	02-2002	Schooley, Frank W.	62/240
*	H	US-6,440,275 B1	08-2002	Domen, Jean-Paul	202/234
*	I	US-6,574,979 B2	06-2003	Faqih, Abdul-Rahman Abdul-Kader M.	62/285
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N	JP01015197A	07-1987	Japan	ISHIKAWA H; KANAZAWA T; O	
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

PTO/SB/08A (07-06)
Approved for use through 09/30/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if known

Application Number	10587760
Filing Date	
First Named Inventor	Richard J. Bailey
Art Unit	
Examiner Name	
Attorney Docket Number	

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 3357898	12-12-1968	Novakovich	
		US- 5517829	05-21-1996	Michael	
		US- 6574979	06-10-2003	Faqih	
		US- 3498077	03-03-1970	Gerard et al	
		US- 3347753	10-17-1967	Morse	
		US- 5675938	10-14-1997	McLorg	
		US- 6440275	08-27-2002	Domen	
		US- 4956936	09-18-1990	Sprung	
		US- 4741123	05-3-1988	Gauthier	
		US- D363993	11-7-1995	Johnson et al	
		US- 4141798	02-27-1979	Grosse	
		US- 4292136	09-29-1981	Clavier	
		US- 4383891	05-17-1983	Clavier	
		US- 6274004	08-14-2001	Andersen	
		US-			
		US-			
		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]

Examiner Signature	/Michael Carton/	Date Considered	04/02/2009

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.C./

DERWENT-ACC-NO: **1989-064246**

DERWENT-WEEK: 198909

TITLE: Mobile overflow weir controller, for bio-oxidising tank contg. meter, thermometer, air blow amt.- and biological membrane contact time period-calculating circuits, etc. for water purificn. plant

INVENTOR: ISHIKAWA H; KANAZAWA T ; OKUMA K

PATENT-ASSIGNEE: HITACHI ENG CO LTD[HITJ] , HITACHI LTD[HITA]

PRIORITY-DATA: 1987JP-168729 (July 8, 1987)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE
JP 01015197 A	January 19, 1989	JA

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
JP 01015197A	N/A	1987JP-168729	July 8, 1987

INT-CL-CURRENT:

TYPE	IPC	DATE
CIPP	C02F3/06	20060101

ABSTRACTED-PUB-NO: JP 01015197 A

BASIC-ABSTRACT:

Mobile overflow weir controller for bio-oxidising tank in water purificn. plant comprises meter and thermometer for measuring amt. and temp. of feed water flown into the tank, respectively, air flow amt. calculating circuit for calculating air amt. flow into the tank, based on measured amt. biological membrane contact time period calculating circuit for the membrane-

contact time
period necessary for making organic substance-removing efficiency at measured
temp. of specific value, circuit for calculating effective water depth for
attaining calculated time period, overflow mobile weir for adjusting water
depth corresponding to effective one, circuit for controlling weir and means
for feeding aerating air to the tank in amt. determined by air flow amt.
calculating circuit.

ADVANTAGE - Treated water with stable quality can be obtd. even when quality of
feed water varies.

TITLE-TERMS: MOBILE OVERFLOW WEIR CONTROL BIO OXIDATION TANK CONTAIN METER
THERMOMETER AIR BLOW AMOUNT BIOLOGICAL MEMBRANE CONTACT TIME PERIOD
CALCULATE CIRCUIT WATER PURIFICATION PLANT

DERWENT-CLASS: D15

CPI-CODES: D04-A01J; D04-A01K;

SECONDARY-ACC-NO:
CPI Secondary Accession Numbers: 1989-028457